NEBRASKA PUBLIC POWER DISTRICT CUSTOMER MEETING ON ENERGY ALTERNATIVES

SUMMARY OF RESULTS

August 19, 2003

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EXECUTIVE SUMMARY

Following are broad conclusions and observations the Public Decision Partnership draws from the attached survey results and from observations at the event. The survey data are extensive and the authors direct those with detailed questions to the data itself.

Conclusions from Survey Results

- The NPPD residential customers who participated in the customer meeting constitute <u>a valid sample</u> of NPPD wholesale and retail residential customers (page 7).
 - The 109 customers who attended the customer meeting, reasonably match the comparative demographic base lines for NPPD established by the larger telephone sample of 1,351 customers and the internal profile assembled from year 2000 census data. The answers on issue questions of the larger telephone sample reasonably match the premeeting answers of meeting participants (pages 29-31).
 - Confidence limits are $\pm 10\%$ at 95%; in other words, 95% of the time, if all customers were asked the same questions, their responses would not vary by more than $\pm 10\%$.
 - The results can be extrapolated to NPPD residential customers as a whole, within confidence levels stated above.

- NPPD residential <u>customers</u> overwhelmingly <u>support</u> the development of the wind <u>projects</u> described in the materials and at the meeting (page 10).
 - 96% think the 200 MW wind addition should go forward.
 - Renewable energy incentives do not make a difference in customer support for the 200 MW wind addition.
 - 50% think 200 MW (or 5% of energy) is about the right size, 37% think it should be expanded, 3% think it should be reduced.
- NPPD residential <u>customers</u> voice strong <u>support</u> for the <u>methane</u>
 (animal manure) <u>projects</u> described at the event (page 12).
 - 81% think the 5 MW of methane development should go forward
 - 44% think 5 MW is about the right size, 29% think it should be expanded; 5% think it should be reduced.
- NPPD residential <u>customers</u> overwhelmingly <u>think</u> the <u>cost</u> of renewables <u>should be</u> a system resource <u>paid for by all</u> customers (page 14).
 - 94% say divide the cost among all customers; 2% say bill the customers who want renewables
 - Support for additional renewables paid for by green marketing programs is moderate (53% yes, 19% no).
- Use of <u>Nebraska based resources is an important</u> consideration for residential customers (page 25).
 - 65% said very important

- 28% said somewhat important
- 2% said not very important
- Customers cite a <u>variety of reasons for favoring</u> more <u>renewable</u> energy. No one reason dominated (page 26).
- Customers are <u>not driven</u> to renewables <u>by</u> concern over environmental problems in their area (page 28).
 - 3% said environmental problems were serious, 11% said moderately serious, and 18% said somewhat serious.
 - Responses to a question on air pollution were similar.
 - A slight majority (58%) expressed concern over climate changes associated with global warming.
- Customers <u>liked the customer meeting</u> and found it <u>valuable</u>, <u>fair</u>, and <u>balanced</u> (pages 29-30).
 - 61% said extremely valuable, 32% said valuable.
 - 65% said the meeting was very fair, 18% said it was fair.
 - 79% said the materials were mostly balanced; 16% said the materials favored some positions over others.

Observations

- The participants were predominately rural (78%) and therefore typically older than a cross-section of the population in a more urban area.
- Participants like the service provided by NPPD and the other retail utility suppliers. There was little evidence of customer dissatisfaction or underlying issues.

- Both coal and nuclear options fared better than they have in other areas of the U.S., in similar polls five years ago.
- Conservation was not fully explored as a resource option due to time but appeared to have considerable support. The same could be said, but to a lesser extent, for solar options, especially in pre-event results
- NPPD staff seemed to enjoy and benefit from a chance to interact with a
 scientific sample of customers (one of everything). Staff likely learned as
 much from the day as did customers, just in different areas.
- Customers appreciated being asked their opinion and took the questions seriously. Many traveled from a great distance. They would like to be kept informed.
- The sample could be used for other research.

NEBRASKA PUBLIC POWER DISTRICT CUSTOMER MEETING ON ENERGY ALTERNATIVES

Summary of the Process

On August 9, 2003, the Nebraska Public Power District (NPPD) invited a scientifically selected sample of its wholesale and retail residential customers to discuss energy alternatives. The 109 participants met in large and small group sessions over eight hours. The participants had completed a telephone survey prior to the event and completed a similar survey again following the event. This report summarizes the results collected from those surveys.

Topics of Discussion

The major topic of discussion centered on customer values and preferences concerning whether NPPD should continue, decrease, or expand the system commitment to renewable resources. The specific projects discussed as examples were to add 200 MW of wind power by 2010 (5% of annual electrical energy) and 5 MW of methane generation (over 5 years) produced from animal manure. The two renewable examples were compared against fossil generation represented by a 250 MW combined cycle gas plant under construction, and a 150 MW participation in a large coal plant using "best available control technology" planned for operation in 2009.

The Process

The process used at the Customer Meeting was Deliberative PollingTM as developed by Professor James Fishkin at The University of Texas at Austin (Professor Fishkin is now located at Stanford University) and licensed through the Stanford Center for Deliberative Democracy. The process samples <u>informed</u> opinion on an issue—in this case, options to meet the need for future generation. The process reveals what participants feel about an issue after having had a chance to read, think, discuss, and ask questions of experts and advocates.

Potential participants were selected through random digit dialing and administered a questionnaire on electricity issues. Once they completed the questionnaire, they were invited to participate in the Customer Meeting. Participants arrived at the event and were assigned randomly to 8 small groups of 13-15 people. A trained, neutral moderator (not an NPPD employee) led each small group through a discussion of the issues. The issues were outlined in a set of materials delivered to participants approximately two weeks in advance of the event. Participants alternated between small group sessions and large group sessions, where participants asked questions of panels composed of subject-matter experts and advocates for different resource solutions. An outside moderator led the large group sessions. (Ron Lehr is an attorney in Denver and was formerly Chairman of the Colorado Public Utilities Commission.)

The Customer Meeting was videotaped by NETV of Lincoln as part of preparing a documentary on the event. The entire process was open to the press and observers.

The findings in this report can be compared with eight similar customer meetings on energy alternatives conducted in Texas by investor-owned utilities in the 1996-1998 timeframe.* The NPPD Customer Meeting is significant because it is the first new Deliberative Polling data on energy alternatives in five years, is the first application by a public power entity (customer-owned versus investor-owned), is the first Deliberative Poll in the Midwest, and is the most rural of the samples selected (reflecting the NPPD service territory, 78% of the telephone sample participants reported they live in an area with less than 50,000 people).

Design and process consultation for the Customer Meeting was provided by Dennis Thomas, Will Guild, and Ron Lehr through the Public Decision Partnership.

Advisory Group

NPPD convened an Advisory Group of diverse viewpoints on the issues to be discussed. Representation on the Advisory Group came from the NPPD service area as well as from interested groups. The responsibility of the Advisory Group was to see that the survey, materials, and the large group panels represented a fair balance of viewpoints. The Advisory Group met three times and contributed many hours toward ensuring the process was fair and balanced.

Participant Reaction

After 8 hours of discussions, the customers gave NPPD high marks for the process. On a 7-point scale with 7 as "extremely valuable" 93% rated the day a 6 or 7.

Confidence Levels and Experimental Design Factors

Since it is not possible to have all NPPD wholesale and retail residential customers together at the same event, a "Customer Meeting" of randomly selected individuals was used as a surrogate. Confidence levels for the results from the Customer Meeting are $\pm 10\%$ at the 95% confidence level. In other words, one can say that, if all NPPD residential customers had been given the same survey, we can be 95% confident their collected opinions would not differ by more than $\pm 10\%$ from the results produced by the Customer Meeting. The confidence level for the larger pre-event survey (1351 participants) is slightly higher and is $\pm 3.5\%$ at the 95% level.

The demographics of those who participated in the larger pre-event survey were checked against the demographics of those who participated in the event. In general, the demographics of the two groups and their attitudes on the indicator questions are very similar. The exception is the small sample was slightly more educated (8% more had college degrees). It would be possible to weight the results, for education or any other variable felt to be under-represented, but the authors do not believe weighting to be necessary in this case. As is the usual practice in research of this nature, participants were paid an honorarium of \$150 and those traveling over 100 miles (approximately 60%) were offered a hotel room and hotel meal vouchers.

Format of the Report and Data Availability

This report provides a summary of the data resulting from the Customer Meeting. The entire data file is available on request.

All charts show results from the post-event questionnaire unless otherwise specified. When charts show pre-event and post-event numbers, the answers are from the pre-event and post-event questionnaires for those who attended the event (N=109). The section on representativeness of the event sample compares those who attended with the whole pre-event sample (N=1351).

Funding Assistance

Funding assistance was provided by the Western Area Power Administration (WAPA) and the Nebraska Energy Office.

^{*} Listening to Customers: How Deliberative Polling Helped Build 1,000 MW of New Renewable Energy Projects in Texas (National Renewable Energy Laboratory Technical Report 620-33177), R. L. Lehr, W. Guild, D.L. Thomas, B.G. Swezey, June 2003.

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Results

Response to Proposed Projects

The most critical findings may be those tied to the two projects being considered by NPPD. For both of these projects the survey only questioned participants at the end of the customer meeting because at that point they were familiar with the tradeoffs involved in these energy sources.

One of the projects being considered is 200 MW of wind energy that would provide 5% of NPPD's energy needs. Respondents were given the following description of the project:

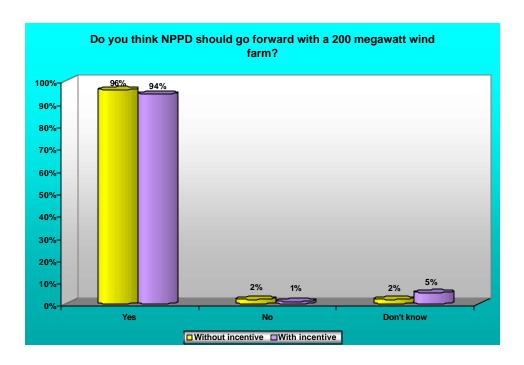
Over the next 10 years NPPD expects the demand for electricity to continue to increase. One course of action NPPD is considering, calls for an additional 200 megawatts of wind power by the year 2010. This would mean that by the year 2010, about 5% of NPPD's total electric energy produced would come from wind power.

The cost of this power would mean that residential bills would increase by approximately 1% to 2% over what they would be otherwise. For the residential customer whose bill averages \$100 a month, this would mean an increase of \$1 to \$2 dollars a month. Increases in Commercial and Industrial customers' bills would be approximately 1.5% to 2.5%, which for an average monthly bill of \$1,000 would mean an increase of \$15 to \$25.

They were then asked whether they believe NPPD should go forward with the program. After responding to the initial description of the program participants were told of a possible federal renewable energy incentive that would mean that NPPD could build a wind farm with no increase in rates. The specific wording is as follows:

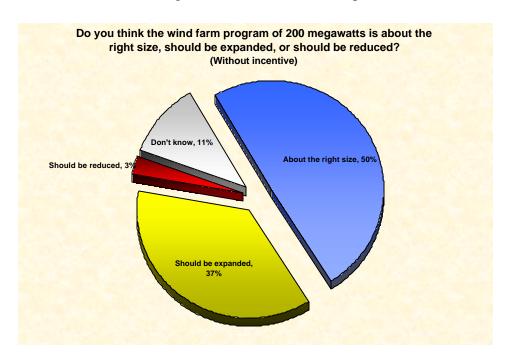
It is possible that there will be a federal incentive for renewable energy. If this were available, there would be no increase in rates or bills over what they would be without a wind farm.

Participants were asked if NPPD should go forward with the project if this renewable energy incentive was available.



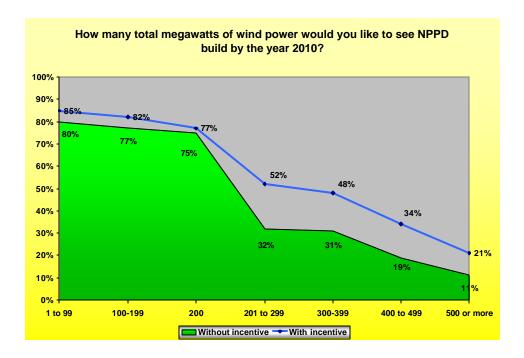
The results indicate overwhelming support for the project, even without a renewable energy incentive.

The survey explained that if the size of the wind farm was increased, the cost to consumers would increase proportionately and if it was reduced, the cost would decrease proportionately. Following this explanation the survey asked whether participants thought the wind farm was the right size or if it should be expanded or reduced.



Only three percent wanted NPPD to build a smaller wind farm while about a third (37%) wanted a larger one.

The survey asked how large a wind farm the participants would like to see NPPD build, with and without the renewable incentive. The chart below shows the response to this question. Those who responded "don't know" or who did not want NPPD to build a wind farm do not appear in the chart which is why the percentage on the left side of the chart does not equal 100%. This is a cumulative chart. To interpret the chart, start at the left hand side. With the renewable energy incentive, 85% of participants wanted at least 1 to 99 megawatts of wind power. Eighty-two percent (82%) wanted at least 100-199 megawatts, 77% wanted at least 200 megawatts, 52% wanted 201 to 299 megawatts and so on.



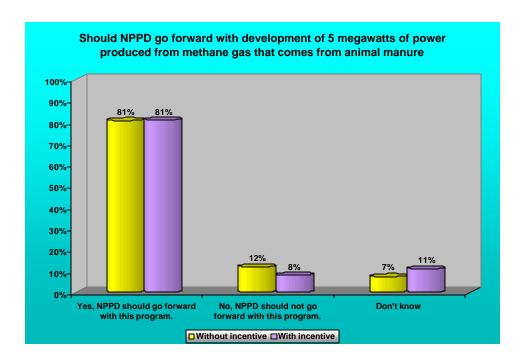
This chart again demonstrates very strong support for a 200 megawatt wind farm and substantial support for even more wind power, particularly if there is a renewable energy incentive.

The second project addressed in the survey was five megawatts of electricity from methane. Participants were given the following description of this project.

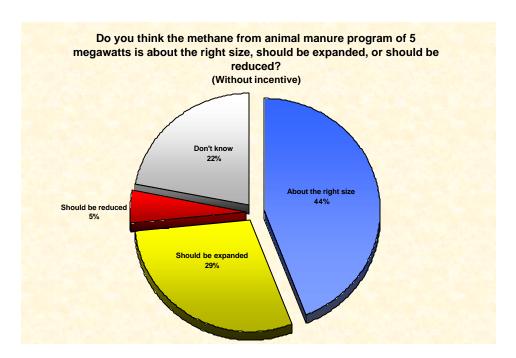
Another course of action NPPD is considering is development of 5 megawatts of power produced from methane gas that comes from animal manure, to be added over 5 years. The cost of this power would increase bill less than 0.1% over what it would be otherwise. For the residential customer whose bill averages \$100 a month, this would mean an increase of 10 cents per month.

Again, participants were asked whether they believe NPPD should go forward with the program. As in the case of the wind project, after responding to the initial description of the program, participants were told of a possible federal renewable energy incentive that

would mean no increase in rates for the methane project. Participants were then asked if NPPD should go forward with the project if this renewable energy incentive was available.

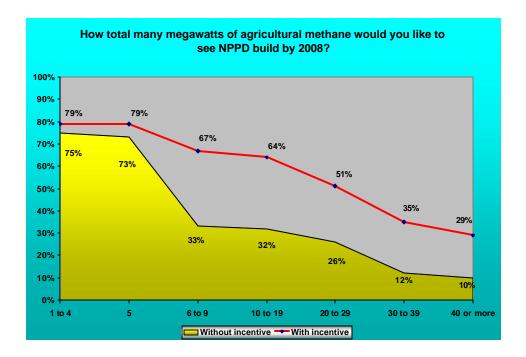


The strong level of support for the methane project was not affected by the possible renewable energy incentive.



Slightly less than half the participants (44%) thought the methane project was about the right size, 5% wanted NPPD to build a smaller project and about a fourth (29%) wanted a larger one.

The survey asked how many megawatts of methane participants would like to see NPPD build, with and without the renewable incentive. The chart below shows the response to this question. Again those who responded "don't know" or who did not want NPPD to build a wind farm do not appear in the chart, which is why the percentage on the left side of the chart does not equal 100%. Respondents were told on the survey that 50 megawatts was the maximum feasible amount of methane projects that could be built.



As was the case with the wind project, the chart demonstrates very strong support for a 5 megawatt methane project and substantial support for even more methane, particularly if there is a renewable energy incentive.

How should NPPD invest in renewable energy?

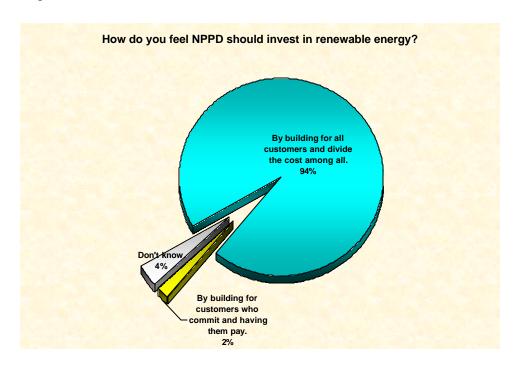
A critical question for utilities considering renewable projects that are more expensive than fossil alternatives is how to pay for these projects. Participants were asked about how NPPD should invest in renewable energy with the following question.

One way would be to build a project such as the wind farm described above and to divide the cost, as well as any benefits from the project (such as stable fuel costs), among all customers.

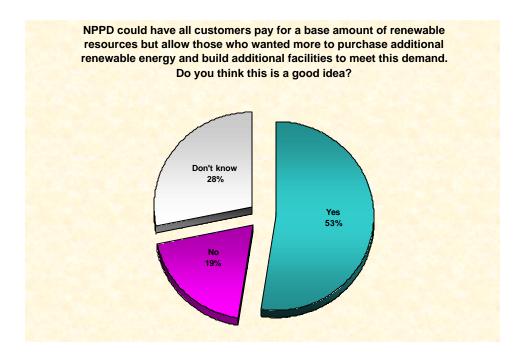
Another way would be to market renewable energy **before** building any facilities to produce it. Customers would be asked to <u>commit</u> to buy renewable electricity and NPPD would only build facilities to produce enough renewable energy to meet the demand of those customers who had committed to buy renewable energy. The cost and any benefits would only go to those customers who had committed to purchase the renewable energy from these facilities. How do you feel NPPD should invest in renewable energy?

- (a.) By building facilities that would provide renewable energy for <u>all customers</u> and divide the cost among all customers
- (b.) By building facilities <u>only for those customers</u> who commit to pay for renewable energy and having only those customers pay for the renewable energy......
- (c.) I don't want NPPD to invest in renewable resources
- (d.) Don't know

Participants were almost unanimous in their support of building facilities and dividing the cost among all customers.



One option utilities sometimes consider is building a base amount of renewable energy resources and dividing the cost among all customers and then adding more as a "green resource" option. In that vein participants were asked if they thought it would be a good idea to have all customers pay for a base amount of renewable resources, but allow those who wanted more to purchase additional renewable energy and build additional facilities to meet this demand.

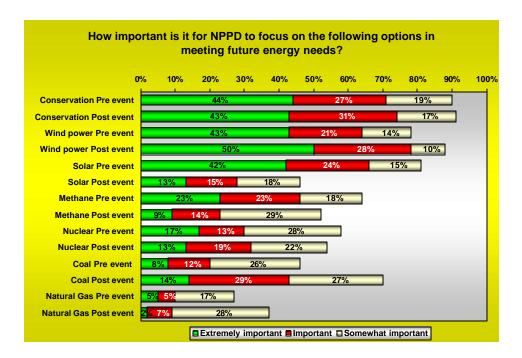


Responses to this option were moderately positive, with just over half (53%) in favor of it and only 19% opposed.

Attitudes Towards Options

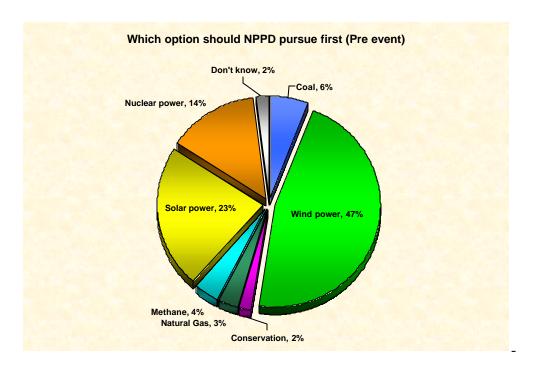
In addition to asking participants about specific projects, the survey also queried them about a number of more general options to meet future energy needs. Unlike questions about specific projects, these were asked when participants were initially surveyed as well as at the conclusion of the event. This allows NPPD to see how attitudes changed as people came to know more about the options and to discuss tradeoffs with fellow customers and experts.

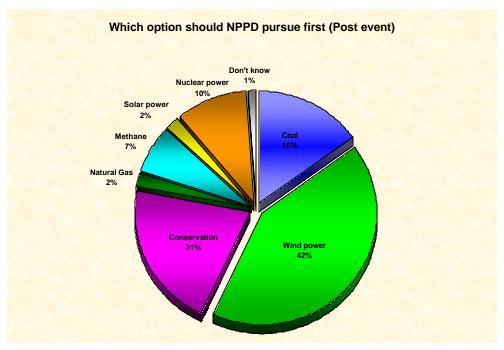
One of these questions simply asked how important it is for NPPD to focus on different options to meet future energy needs.



Conservation and wind power were both seen as highly important both before and at the conclusion of the NPPD customer meeting. The perceived importance of solar power as a option for NPPD to focus upon was strong before the event, but dropped 30 points at the conclusion. While coal was not seen as one of the most important options, its perceived importance increased at the conclusion of the customer meeting.

In addition to looking at the perceived importance of options the survey also asked which options participants felt NPPD should pursue first.

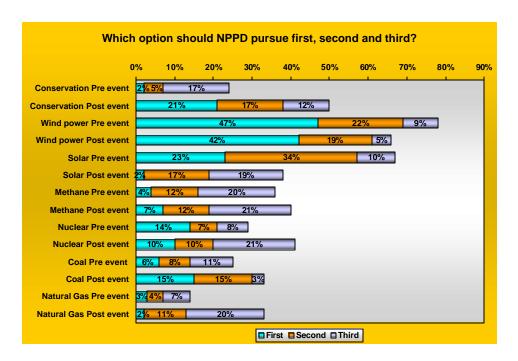




Wind power was selected most often as the option NPPD should pursue first both before and at the conclusion of the customer meeting. The percentage of participants selecting

solar power dropped very substantially, while the percentage choosing conservation increased substantially at the conclusion of the meeting. The percentage choosing coal as the first option also increased significantly compared to the initial results.

The chart below shows the pre and post results for which option participants would want NPPD to pursue first, second and third among seven options which were given to respondents.

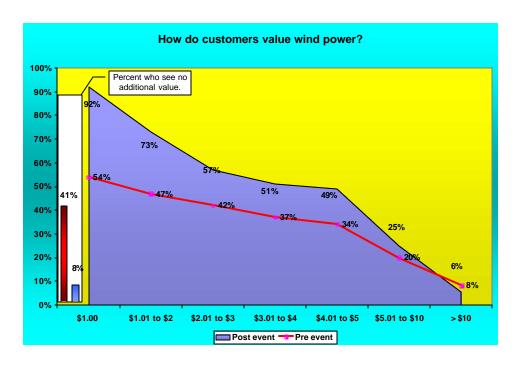


Another way the survey examined the value participants associated with different ways of meeting energy needs was by asking them the following.

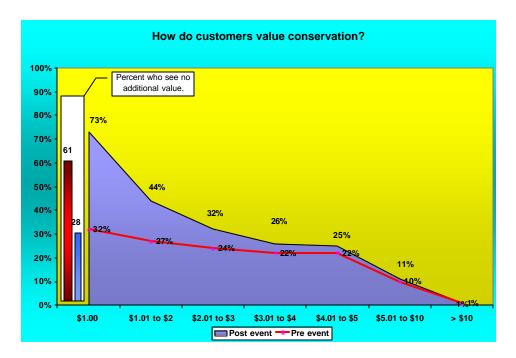
Some of the options, which were just mentioned, could be more expensive while others could be less expensive. As a way of determining how much value you place on each option, please tell us how much more, if anything, you would be willing to pay above your current monthly electric bill to have your utility pursue each option.

The authors caution against looking at this data as a way of determining what customers would actually pay for each resource, as there are many other variables that could affect actual customer behavior. However, this is a useful way to look at how they value each resource relative to the others.

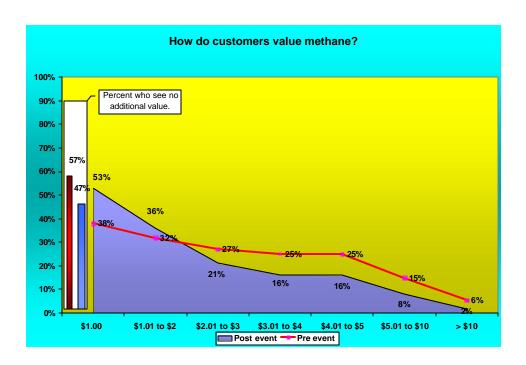
Responses to these questions were open-ended. They were coded and grouped into categories. The charts below have the following groupings, \$1.00, \$1.01 to \$2.00, \$2.01 to \$3.00, \$3.01 to \$4.00, \$4.01 to \$5.00, \$5.01 to \$10.00 and more than \$10.00. Those who responded don't know do not appear on the chart. Reading from left to right, at each point the percentage shown is the percent willing to pay at least that much. The order of the graphs is from greatest post event value to least post event value.



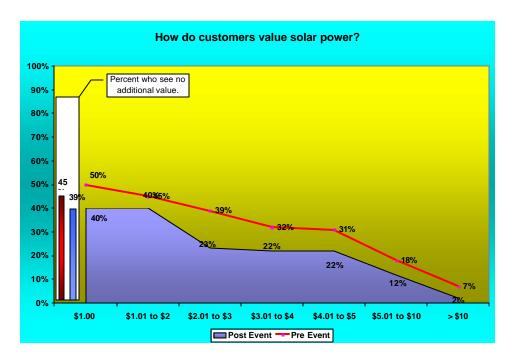
Wind was the most highly valued option and the perceived value of this resource increased compared to the initial survey.



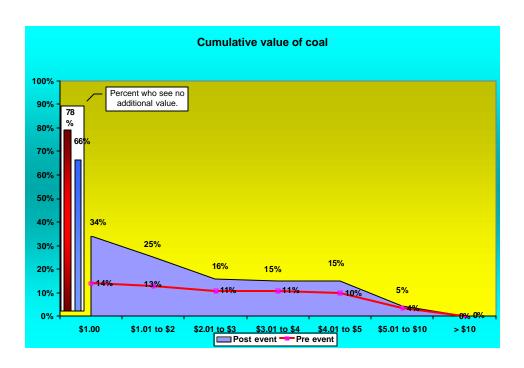
Participant's perception of the value of pursuing conservation dramatically increased following the customer meeting. This option was second only to wind in the perceived value.



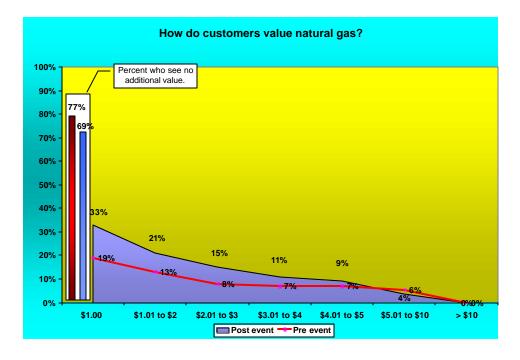
Methane was not as highly valued as wind or conservation, but over half the participants said they were willing to pay a something extra for NPPD to pursue methane. Note that in the post event results, the extra amount participants were willing to pay dropped quickly past the \$1.00 mark.



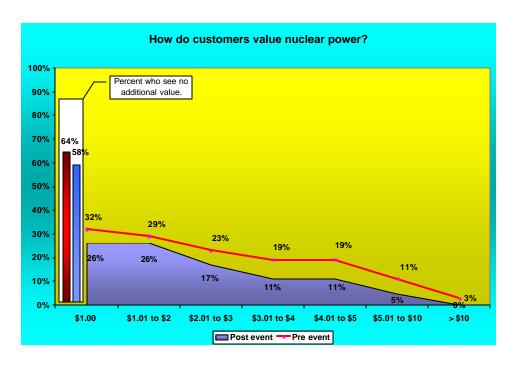
The value of NPPD pursuing solar energy decreased following the event.



The post event value of coal and natural gas are very similar. The value participants gave to coal went up following the customer meeting.



The perceived value of natural gas also went up slightly following the meeting.



There was a very slight decrease in participant's valuing of nuclear power following the meeting.

Values of Participants

Customer values related to electricity were also examined as part of this project. In one set of questions the survey examined the importance of five factors. These factors were:

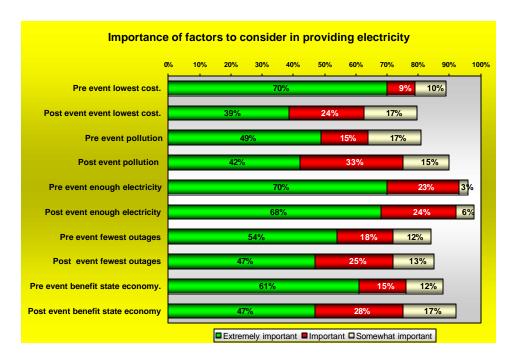
To receive electricity at the lowest cost.

To protect the people and the environment from pollution created by producing electricity.

To be sure there is enough electricity to meet needs now and in the future.

To have as few electric outages as possible.

To produce electricity in ways that will benefit the state's economy.

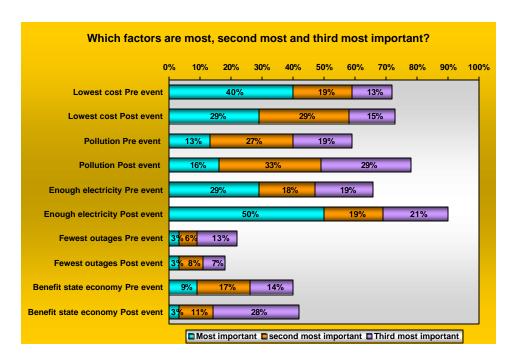


All factors are seen as rather important with lowest cost and enough energy for now and in the future receiving the highest percentage of extremely important ratings in the initial survey. This changed considerably in the post event survey.

The percentage of customers who responded that cost was extremely important dropped from 70% to 39%, while the percentage that said it was important rose from 9% to 24%. This result indicates that cost did not become unimportant, but that when given information and the opportunity to consider tradeoffs, cost is not quite as important when put in the context of other factors. Interestingly, the percentage of respondents indicating the various factors are "extremely important" dropped for every factor except having enough electricity, while the percent responding "important" tended to go up. This makes sense given our past experience with Deliberative Polling. After the event

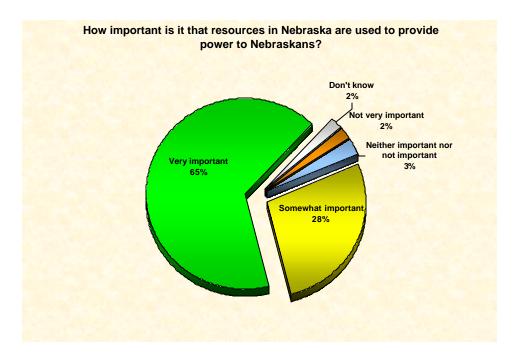
respondents apparently give more thought to their answers with the result that they make finer gradations in importance ratings.

The survey also asked respondents which of the five factors were most important. As can be seen from the graph below, after the customer meeting, having enough electricity stood out as having the greatest importance.



Lowest cost and protecting people and the environment from pollution were the next most important factors, followed by benefiting the state economy and having the fewest outages. In past research experience the authors have found that people expect to have reliable electricity and because of this assumption, they tend to see reliability as less important than other factors. This picture changes rapidly when reliability issues appear.

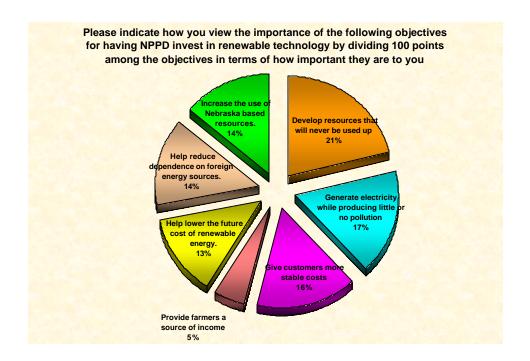
The survey asked one question focused particularly on participant view of the importance of using Nebraska resources to provide power for the people of Nebraska.



Two thirds of participants considered this to be important.

Most of the participants favored the development of renewable resources. As NPPD thinks about its long-term plans it maybe helpful to understand what objectives its customers wish to meet through the development of such resources. The survey asked the following question to explore these objectives.

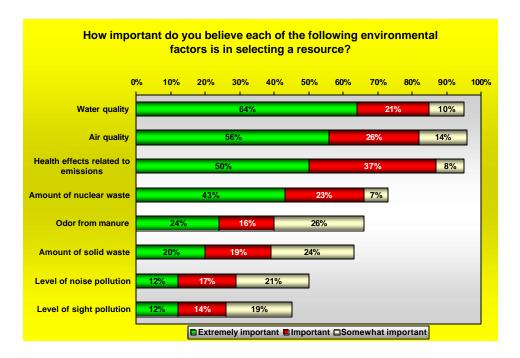
People might have different objectives they want fulfilled by having NPPD invest in renewable technology. One objective is to develop resources that will never be used up. Another is to create electricity in ways that produce little or no pollution. A third is to provide customers with more stable costs for electricity by getting rid of variability in fuel costs. A fourth is to provide a source of income for farmers who can lease their land for wind turbines. A fifth is to help lower the future cost of renewable energy by increasing the production of renewable technology. Please indicate how you view the importance of these by taking 100 points and dividing them among the objectives in terms of how important they are to you. For example, if you think there is only one important objective you might assign it all 100 points. If you think all three objectives are equally important you might divide the points evenly.



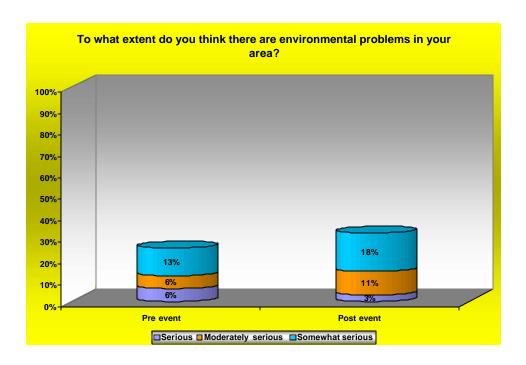
There is no one objective that is seen as most important. Having sustainable resources, controlling pollution, stable costs, reducing dependence on foreign sources, using Nebraska sources, and lowering the future cost of renewables are all seen as important. Participants saw renewable energy not as a way of achieving one particular goal but a number of distinct goals.

Environmental issues

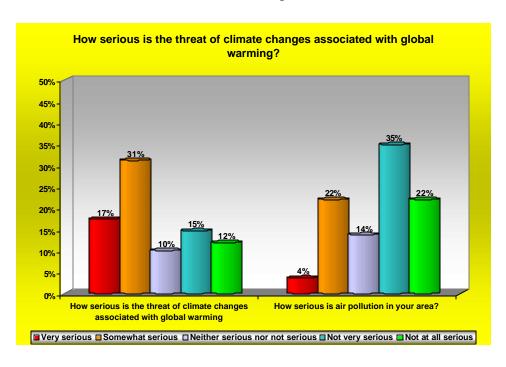
A number of environmental questions were included in the survey. One set of items concerned the importance of different environment issues in choosing a resource for electricity. This set of questions was only asked after the event.



Water quality was the most important environmental factor for participants followed by air quality and health effects related to emissions. Participants saw environmental factors that would only affect the area immediately around the site of a power facility (noise or sight pollution) as much less important.



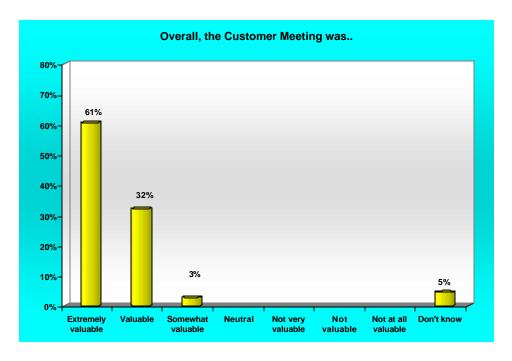
There is little concern about local environmental problems.



NPPD customers are more concerned with the threat of climate change associated with global warming than with local air pollution.

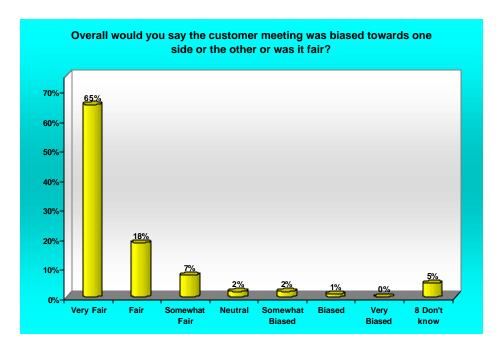
Ratings of NPPD Customer Meeting

In the last section of the post event survey, participants were asked to evaluate the customer meeting. One item in this section asked them how valuable they found the meeting.

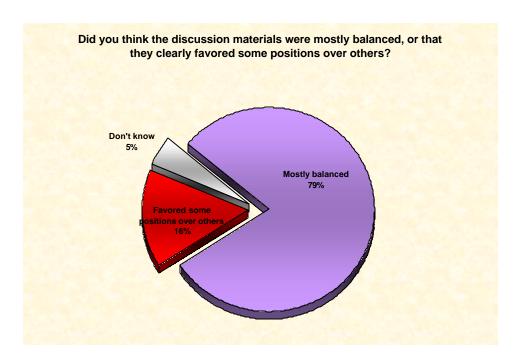


Almost two thirds (61%) gave the event the highest possible rating, extremely valuable. An additional 32% rated it as valuable. Not one participant rated the event negatively.

Participants were also asked whether they saw the meeting as fair or biased. The overwhelming majority saw it as fair.

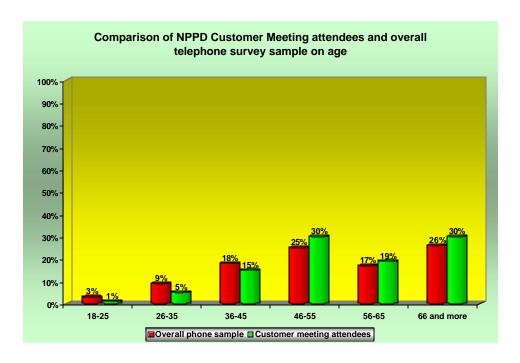


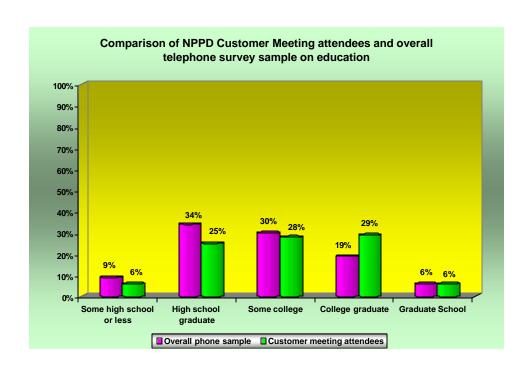
Finally, participants were asked whether the discussion materials were balanced or whether they favored some positions over others. Again, the vast majority saw the materials as balanced.

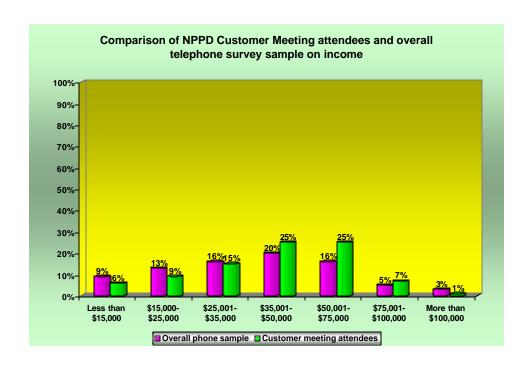


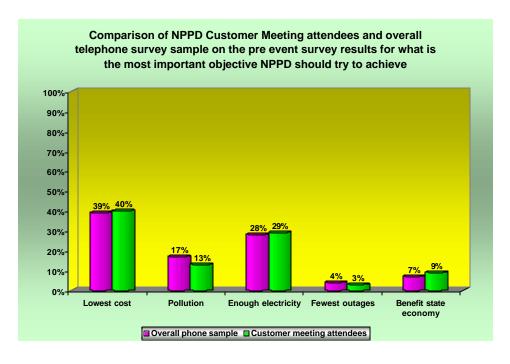
Comparing Customer Meeting Attendees to the Initial Telephone Sample

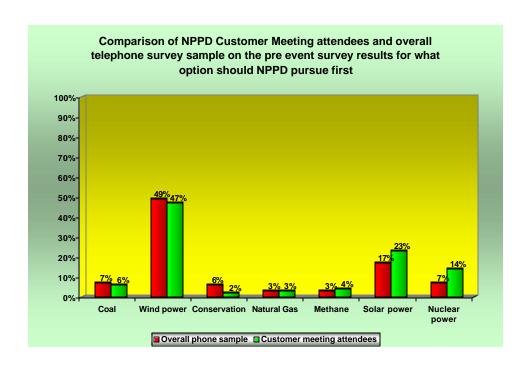
The following compares the large telephone sample (1,351) to the pre event response of the 109 participants of the NPPD Customer Meeting. Responses are compared on demographic variables and key attitudinal variables. While the group that attended the event was slightly more educated than the overall sample the authors conclude that no weighting of the results is necessary.











Appendix A

Participant Comments

Participant Comments

(Regarding question 23) I think they should establish a policy on renewable energy and that should be passed on to everyone - people just won't take the time or spend the money to get involved in these issues.

As a consumer, I believe NPPD is doing a great job for what we pay. And I do appreciate the fact we had the opportunity to learn more about future goals of NPPD. Meeting was great. Thanks.

Conservation and education can lower the cost by lowering demand. Customers need to know peak load hours so they can be avoided. We (customers) can do a part as important as building new and more plants! Customers need to be informed and educated.

Enjoyable meeting.

Enjoyed my day. Information was great. Thanks.

Enjoyed the day and very informative. Thank you.

Enjoyed the opportunity to participate and appreciate the money spent by NPPD to facilitate this meeting. Thanks so much and I hope to hear updates on future decisions!

Excellent meeting! I felt like I learned quite a bit. Thank you for the opportunity to participate.

Good meeting!

Good meeting. NPPD should pursue other sources but only if cost effective.

Great meeting! Very efficient.

Great meeting. It was enlightening to hear what other customers thought and had experienced.

Had a nice time, thank you.

Having sat through numerous boring teachers workshops and in service speakers, I was a bit concerned about the use of my time today. I was rewarded with good information, which was presented well. Thanks!

I appreciate NPPD everyday. What a luxury to get up, turn up thermostat to get heat (thermostat is electric). So nice to turn on a light when I come home. When we get rural public power on my folks' farm - it caused house to become modern.

I appreciate the information for customers.

I believe in our energy sources being diversified. One never knows what future will bring - or another Sept. 11th. We need to keep open minds at all times.

I feel that R&D must be funded to develop storage for wind power and some type of funding developed for methane development.

I have learned much more than I knew about electricity. The info will be useful. Thank you.

I learned a lot. It opened my eyes to a lot of concerns that I will share with my family and friends. Why was the question about coal dust in the air not answered?

I learned many new things. This was an educational experience. I feel the facilitators kept things moving while giving everybody a chance to contribute. The information and considerations were appreciated.

I think for most part panel was great!

I think we are very lucky to have NPPD.

I think you need to expand the wind resources and look for alternative resources to replace the natural gas as it will run out. Look more into methane gas from cattle - lots of feedlots are having problems with odor and dust.

I thought it was very educational.

I would like to have discussed water. I've heard the Merritt Dam on the Snabs River has the foundation for generation in place already. Niobrare could have a turbine every 20 miles. There must be a reason you do not favor water.

If the moderator would have read the submitted questions (I have a hearing problem) I believe response would have been better. Great meeting!

Initially I mentioned and still believe nuclear power is a very viable source NPPD should work with other generators, nationwide, to educate the public and reverse public policies against nukes. The discussion was very interesting.

It has been a great experience.

It was great learning experience and I enjoyed the entire time and people.

Met some wonderful people, opened people up. Larry didn't get to talk. I let John ask my question, very opinionated people, some great people. Hats off to NPPD.

Moderators very good.

Name tents on tables needed names on both sides. It was a fast day. Well planned and executed. NPPD needs to not waste time in developing renewable resources elect generation even if the cost is higher. We cannot wait and let our kids have a polluted world with few resources. NPPD needs to take the lead in this area and not be a follower. Press forward.

NPPD should continue to seek customer input, and provide results to all customers. Perhaps a subcommittee formed to assist in providing input to directors - provide a balance. I was very impressed with the entire day. I applaud the NPPD staff. Keep up the good work.

People of Nebraska are not going to ever run out of electricity - push comes to shove some way they will find the money to retain the use of electricity.

Perhaps conduct a briefing for "public power employees" would be as good as I found myself biting my tongue at times. By doing that however, it was good to learn the real perception of our customers.

Should have considered solar energy more.

Thank you for a valuable education. I enjoyed thoroughly.

Thank you for asking me to attend. Was a great meeting.

Thank you for asking me. Gained insight into our electrical problems.

Thank you!

Thanks for having me here. Was good to see customers involved.

Thanks for the invitation, had a great time and learned a lot, more than I thought.

The age of the group could have been an average. Good meeting. Thanks.

The handout was written for a college educated level it seemed to me. I'm not sure if it reached the population. Moderator did not solicit everyone's input. Certain assumptions were not presented such as why hydro or nuclear discussions were off table

The meeting was very informative.

The meetings were very interesting and informative and I thank you for inviting me.

The push to wind generation seemed to be the overall theme. It seemed to me that most panelists favored wind over methane for renewable source solar was not one involved in the discussion.

The sessions were extremely productive for a first attempt at this method. Job well done by staff of NPPD. Staff expressed sincerity in their wish to understand the people's needs and opinions.

The meeting was very worthwhile. I learned quite a bit about NPPD and power in Nebraska. Thanks for the opportunity to participate.

There are other windmill farms out there producing power some numbers would have been nice to compare costs over ours to produce electricity.

These processes are important. I commend NPPD. Please continue.

This meeting gave me a new outlook on renewable energy. There are many areas to consider and hope we all can move toward reasonable and safe renewable energy.

This was a very good learning experience. The speakers for the day were very good at what they do. Also the moderator in our small group was very good. Thanks for a day well spent.

This was a very informative and enjoyable experience for me today. Thank you for inviting me to participate.

This was a very informative day.

This was an extremely well organized meeting. I was very impressed with the efficiency and professional conduct of all the "staff" and panelists. This was a most worthwhile experience. I feel very fortunate to have had the opportunity to participate.

Very educational! Thank you.

Very educational, I learned a lot.

Very educational, well worth the time and effort. Thanks for inviting me.

Very good meeting. Would have been very good if US Representatives or Senators could have been present.

Very helpful, I gained more insight and understanding of everything involved!

Very informative and an interesting experience.

Very informative meeting.

Very interesting and keep up the good work!

Very interesting. Received a lot (of) input.

Very interesting. Thanks for asking us what we think, instead of assuming you knew. Thanks for the opportunity to learn, discuss and ask the experts. Our group sometimes had a hard time staying on task. We could have done better with the questions for the large group.

Very well done. Thank you for giving me the opportunity to participate.

Very well organized and informative.

Very well thought out and executed. Liked the comments from the panel members.

We needed the low persistance of the need of coal and natural gas to stabilize the tendancy to go for all renewable. Thank you.

Would appreciate comments from panel members.

You have your heads in the right places! Cost, reliability and environmentally safe. Conservation should be first on the list even if someone's air conditioner, etc. is automatically shut off to help. We need to get rid of these peak periods.

Appendix B

Questionnaires

Final DRAFT OF NPPD SURVEY

Telephone Version

Hello, my name is and I am calling on behalf of The Nebraska Public Power District (NPPD), which provides electricity to individuals, cities, rural power districts and cooperatives in Nebraska, is currently making decisions about energy resources that will affect all of those who use its energy. The District is very interested in your feedback and wants to understand your view points. We're conducting a survey to provide NPPD with this information. Can I have a few minutes of your time?						
•	esponding to the questions in this survey please feel free to tell us if you have no opinion or t know.)					
1.	On a 1 to 7 scale, where 1 stands for not at all important, 7 stands for extremely important, and 4 stands for average importance, how important do you think it is for your utility to pursue renewable energy as one source for electricity.					
you,	following is a list of items relating to energy. Please rate how important each statement is to using a 1 to 7 scale, where 1 stands for not at all important, 7 stands for extremely important, 4 stands for average importance. (8 is don't know).					
2a.	To receive electricity at the lowest cost					
2b.	To protect the people and the environment from					
2c.	To be sure there is enough electricity to meet					
2d.	To have as few electric outages as possible					
2e.	To produce electricity in ways that will					
	R #3a-3c, WRITE THE LETTER FROM THE STATEMENT ABOVE THAT BEST RRESPONDS WITH YOUR RESPONSE IN THE SPACE PROVIDED.)					
3a. V	Which of these do you think is most important?					
3b. Which do you think is second most important?						
3c. V	Which do you think is third most important?					

meet think	we would like to ask you about some specific options NPPD will consider in planning to the area's future need for electricity. For each of these please tell us how important you it should be for NPPD to focus on in the future, using a 1 to 7 scale, where 1 stands for not important, 7 stands for extremely important, and 4 stands for average importance.
4a.	Providing customers with electricity generated by coal1234567
4b.	Providing customers with electricity generated by12345678 wind power.
4c.	Providing customers with ways to save energy and 1 23 45 67 8 thereby reduce the need for additional electric generation.
4d.	Providing customers with electricity generated
4e.	Providing customers with electricity generated by12345678 methane obtained from animal manure.
4f.	Providing customers with electricity generated by12345678 solar power.
4g.	Providing customers with electricity generated by12345678 nuclear power.
	R 5a-5b, WRITE THE LETTER FROM THE STATEMENT ABOVE THAT BEST RESPONDS WITH YOUR RESPONSE IN THE SPACE PROVIDED.)
5a.	Assuming the cost is the same, which of these do you think your utility should pursue first?
5b.	Which do you think they should pursue second?
5c.	Which do you think they should pursue third?
less e how to	e of the options, which were just mentioned, could be more expensive while others could be expensive. As a way of determining how much value you place on each option, please tell us much more, if anything, you would be willing to pay above your current monthly electric bill we your utility pursue each option. If you are unwilling to pay any more, just say 0. Please er in terms of dollars per monthly bill.
6a.	Electric generation from facilities using coal\$
6b.	Electric generation using wind power\$
6c.	Electric generation from facilities using natural gas\$
6d.	Reducing the need for additional electric generation. by providing customers with ways to save electricity
6e	Flectric generation using methane obtained from animal manure

6f.	Electric generation using solar power	\$
6g.	Electric generation using nuclear power.	\$
	a scale of 1 to 7 where 1 represents no environmental probonmental problems, to what extent do you think there are en	
	No Serious Problems Problems 1 2 3 4 5 6 7	Don't Know 8
total whol	e almost done. I just have a few more questions that are necessample of consumers contacted is representative for the area esale customers. Your answers will be confidential and will ndents to develop a profile in order to determine the accuracy	served by NPPD and our be grouped with other
8.	What is the highest grade of school you have completed?	
	 1 Less than high school 2 Some high school 3 High school graduate 4 Some college 5 College graduate 6 Graduate school 7 Trade or technical school 8 Refused 	
9.	Which of the following categories best represents your age	?
	1 18-25 2 26-35 3 36-45 4 46-55 5 56-65 6 Over 65 7 Refused	
10.	For statistical purposes only, could you tell me which of the represents your total family income last year?	e following categories best
	1 Less than \$15,000 2 \$15,000 to about 25,000 3 \$25,000 to about 35,000 4 \$35,000 to about 50,000 5 \$50,000 to about 75,000 6 \$75,000 to about 100,000 7 More than \$100,000 8 Refused	

11.	In order to make sure all ethnic groups are represented in our sample, could you tell me if you are Hispanic, African American, Asian, Non-Hispanic White, Native American, or part of some other ethnic group?
	1 Hispanic
	2 African American
	3 Asian
	4 Non-Hispanic White
	5 Native American
	6 Other
	7 Refused
12.	Note Gender
	1 Male
	2 Female
13.	Would you say you live in an urban area (50,000 or more) or a rural one?
	1 Urban
	2 Rural

NEBRASKA PUBLIC POWER DISTRICT DELIBERATIVE POLL

AUGUST 9, 2003

SELF ADMINISTERED QUESTIONNAIRE

Name:	
Group number:	
Respondent #:	

DIRECTIONS

PLEASE READ EACH QUESTION CAREFULLY. REMEMBER, THERE ARE NO RIGHT OR WRONG ANSWERS – WE JUST WANT TO KNOW YOUR OWN PERSONAL OPINION.

We would like you to fill out this questionnaire on your own. When you are finished please return the questionnaire to your moderator.

HOW TO FILL OUT THIS QUESTIONNAIRE

To answer most questions you need only circle one number. Here are two examples:

Example A:

How often do you use the Yellow Pages in the phone book?

Almost every day	•••••	1
	Several times a month	2
	About once a month	3
	Less than once a month	4

[IF YOU USE THE YELLOW PAGES SEVERAL TIMES A MONTH, CIRCLE NUMBER "2." CIRCLE ONE NUMBER ONLY.]

Agree

Example B:

Do you agree or disagree with the following statements?

Neither

Agree agree nor Disagree Disagree

		Strongly	some	what	disagree	somewhat	strongly	know
A. It is difficult to raise children.	1	2	3	4	5	6		
B. Cats make the best pets	••••	1	2) ·	3	4	5	6

[YOU WOULD CIRCLE "1" IF YOU "AGREE STRONGLY" WITH THE FIRST STATEMENT, AND "4" IF YOU "DISAGREE MILDLY" WITH THE SECOND STATEMENT.]

Don't

SURVEY

(In re	esponding to the questions in this survey please feel	free to tell us i	f you have no o	pinion or don'	t know.)	
1	1. On a 1 to 7 scale, where 1 stands for not at all important, 7 stands for extremely important, and 4 stands for average importance, how important do you think it is for your utility to pursue renewable energy as one source for electricity.					
	·	Not at all Important	Average	Extremely important		
		12	345	.67	8	
7 sca	Collowing is a list of items relating to energy. Please le, where 1 stands for not at all important, 7 stands france.					
			Average	Extremely important		
2a.	To receive electricity at the lowest cost	12	345	.67	8	
2b.	To protect the people and the environment from pollution created by producing electricity.	2	345	. 67	8	
2c.	To be sure there is enough electricity to meet needs now and in the future.	2	345	. 67	8	
2d.	To have as few electric outages as possible	12	345	. 67	8	
2e.	To produce electricity in ways that willbenefit the state economy.	2	345	. 67	8	
	R #3a-3c, WRITE THE LETTER FROM THE S' H YOUR RESPONSE IN THE SPACE PROVID		ABOVE THAT	Γ BEST COR	RESPONDS	
3a.	Which of these do you think is most important?					
3b.	Which do you think is second most important?					
3c.	Which do you think is third most important?					
Now we would like to ask you about some specific options NPPD will consider in planning to meet the area's future need for electricity. For each of these please tell us how important you think it should be for NPPD to focus on in the future, using a 1 to 7 scale, where 1 stands for not at all important, 7 stands for extremely important, and 4 stands for average importance.						
		Not at all Important	Average	Extremely important	Don't know	
4a.	Providing customers with electricity generated by	coal12	345	. 67	8	
4b.	Providing customers with electricity generated by wind power.	12	345	.67	8	

	Not at Impor	0	Extremely Don't important know
4c.	Providing customers with ways to save energy and1. thereby reduce the need for additional electric generation.	245	5 6 7 8
4d.	Providing customers with electricity generated	245	5 6 7 8
4e.	Providing customers with electricity generated by1. methane obtained from animal manure.	245	5 6 7 8
4f.	Providing customers with electricity generated by1. solar power.	245	5 6 7 8
4g.	Providing customers with electricity generated by1. nuclear power.		
(FO	OR 5a-5b, WRITE THE LETTER FROM THE STATEM TH YOUR RESPONSE IN THE SPACE PROVIDED.)		
5a.	Assuming the cost is the same, which of these do you think	k your utility should	l pursue first?
5b.	Which do you think they should pursue second?		
5c.	Which do you think they should pursue third?		
As a wou	ne of the options, which were just mentioned, could be more a way of determining how much value you place on each optild be willing to pay above your current monthly electric bill rilling to pay any more, just say 0. Please answer in terms of	on, please tell us ho to have your utility	ow much more, if anything, you pursue each option. If you are
6a.	Electric generation from facilities using coal.	\$	
6b.	Electric generation using wind power.	\$	
6c.	Electric generation from facilities using natural gas.	\$	
6d.	Reducing the need for additional electric generation by providing customers with ways to save electricity.	\$	
6e.	Electric generation using methane obtained from animal m	anure. \$	
6f.	Electric generation using solar power.	\$	
6g.	Electric generation using nuclear power.	\$	

In choosing between resources to produce electricity there are many different factors that might be considered. Please tell me how important you believe it is to consider each of the following factors in selecting a resource, using a 1 to 7 scale where 1 stands for not at all important, 7 stands for extremely important, and 4 stands for average importance.

Шр	ortant, and + stands for average importance.	Not at all Important	Average	Extremely important	Don't know
	7a. Impact on water quality	1	234	567	8
	7b. Controlling odor from animal manure	1	234	567	8
	7c. The amount of solid waste produced (such as	coal ash) 1	234	567	8
	7d. Controlling the level of noise pollution	1	234	567	8
	7e. Controlling the level of sight pollution	1	234	567	8
	7f. Health effects related to emissions	1	234	567	8
	7g. The creation of nuclear wastes	1	234	567	8
	7h. Impact on air quality	1	234	567	8
WI	OR 8a-8b, WRITE THE LETTER FROM THE STH YOUR RESPONSE IN THE SPACE PROV. Which of these is most important?		ABOVE THAT	T BEST CORRE	ESPONDS
	Which is next most important?				
8c. \	Which is third most important?				
NPF by the The would of \$	r the next 10 years NPPD expects the demand for exp is considering, calls for an additional 200 megavine year 2010, about 5% of NPPD's total electric encost of this power would mean residential bills would be otherwise. For the residential customer whose to \$2 dollars a month. Increases in commercial a 5%, which for an average monthly bill of \$1,000 were supported by the property of the property	watts of wind po ergy produced v uld increase by a se bill averages S nd industrial cus	wer by the year yould come fro approximately \$100 a month, t stomers' bills w	r 2010. This woum wind power. 1% to 2% over whis would mean a could be approxing the could be approxing the could be approxing the could be approximately the could be approximately to the could be approximately the country that the country the country that the country	ald mean that that they an increase
9.	Do you think the NPPD should go forward with	this program?			
	A. Yes, NPPD should go forward with this progr	ram.			
	B. No, NPPD should not go forward with this pr	ogram.			
	C. Don't know				

10.	If the size of the wind farm were increased, the cost to consumers would increase proportionately, if it were reduced the cost would decrease proportionately. Do you think the wind farm program of 200 megawatts is about the right size, should be expanded, or should be reduced? (Please circle one answer.)
	A. About the right size [Go to Question 12.]
	B. Should be expanded [Answer Question 11]
	C. Should be reduced [Answer Question 11]
	D. Don't know.
If yo	ou responded expanded or reduced to question 10:
11.	How many total megawatts of wind power would you like to see NPPD build by the year 2010?
	megawatts
	possible that there will be a federal incentive for renewable energy. If this were available, there would be no ease in rates or bills over what they would be without a wind farm.
12.	If this federal incentive is available, do you think NPPD should go ahead with this program?
	A. Yes, NPPD should go ahead with this program.
	B. No, NPPD should not go ahead with this program.
	C. Don't know

- C. Don't know
- 13. If the federal incentive were available, how many <u>total</u> megawatts of wind power would you like to see NPPD build by 2010?

Another course of action NPPD is considering is the development of 5 megawatts of power produced

____ megawatts

from methane gas that comes from animal manure, to be added over 5 years. The cost of this power would increase bills less than 0.1% over what they would be otherwise. For the residential customer whose bill averages \$100 a month, this would mean an increase of 10 cents per month.

14. Do you think the NPPD should go forward with this program?

- A. Yes, NPPD should go forward with this program.
- B. No, NPPD should not go forward with this program.
- C. Don't know

15.	Do you think the methane from animal manure program of 5 megawatts is about the right size, should be expanded, or should be reduced?						
	A. About the right size [Go to Question 17.]						
	B. Should be expanded [Answer Question 16]						
	C. Should be reduced [Answer Question 16]						
	D. Don't know.						
If yo	ou responded expanded or reduced to question 15:						
16.	How total many megawatts of agricultural methane would you like to see NPPD build by 2008?						
	megawatts (maximum amount feasible is 50 megawatts).						
	deral incentives for methane gas projects were available there would be no increase in rates or bills over they would be without a methane gas project.						
17.	If this incentive were available do you think NPP D should go ahead with this program?						
	A. Yes, NPPD should go forward with this program.						
	B. No, NPPD should not go forward with this program.						
	C. Don't know						
18.	If the incentive were available how many <u>total</u> megawatts of methane would you like to see NPPD build by 2008?						
	megawatts (maximum amount feasible is 50 megawatts).						
19.	Another objective of a methane gas project would be to reduce the odors associated with animal manure. How important do you think it is for NPPD to invest in a renewable energy project that reduces the odors associated with animal manure. Please use a 1 to 7 scale where 1 stands for not at all important and 7 stands for extremely important?						
	Not at all Average Extremely Don't Important important know						

20.	In order seven are only objecti	might have different objectives they want fulfilled by having NPPD invest in renewable technology. The to help us understand how important these objectives are to you, please divide 100 points among the objectives listed below in proportion to how important they are to you. For example, if you think there y two important objectives you might divide all 100 points between these two and give the remaining ves all 0. If you think all of the objectives are equally important, you might assign about 13 points to Please assign any amount of points from 0-100, but make sure your total points only add up to 100.					
	(a.) To d	evelop resources that will never be used up					
	(b.) To g	enerate electricity while producing little or no pollution					
		ive customers more stable costs					
	(d.) To provide farmers a source of income						
	(e.) To help lower the future cost of renewable energy						
	(f.) To help reduce dependence on foreign energy sources.						
	(g.) To increase the use of Nebraska based resources.						
		Total Points: 100					
22.	One wany be Anothwould enough	g they were more expensive than other energy sources, there are two ways NPPD could invest in able resources, such as wind power or methane from animal manure. ay would be to build a project such as the wind farm described above and to divide the cost, as well as nefits from the project (such as stable fuel costs), among all customers. be asked to commit to buy renewable energy before building any facilities to produce it. Customers be asked to commit to buy renewable electricity and NPPD would only build facilities to produce in renewable energy to meet the demand of those customers who had committed to buy renewable. How do you feel NPPD should invest in renewable energy? (Please circle only one below.) By building facilities that would provide renewable energy for all customers and divide the cost among all customers. By building facilities only for those customers who commit to pay for renewable energy and having					
		only those customers pay for the renewable energy. (Go to #24).					
	C.	I don't want NPPD to invest in renewable resources. (Go to #24).					
	D.	Don't know (Go to #24).					
23.	resour						
		on't know					
	3 2						
24.		cale of 1 to 7 where 1 represents no environmental problems and 7 represents serious environmental ms, to what extent do you think there are environmental problems in your area?					

		No problems	Serious problem	Don't know
Extent	of environmental problems in my area	12	34 56 7	8
In your opin	ion, how serious are the following th	ree specific environme	ental issues.	
25. Hov	v serious is the threat of climate change	es associated with globa	ıl warming	
1	Not at all serious			1
	Not very serious			
	Neither serious nor not serious			
4	Somewhat serious			4
5	Very serious			5
6	Don't know			6
26. Hov	v serious is air pollution in your area?			
1	Not at all serious			1
	Not very serious			
	Neither serious nor not serious			
	Somewhat serious			
	Very serious Don't know			
	important is it that resources in Nebra			·
1	Not at all important			1
	Not very important			
	Neither important nor not important -			
4	Somewhat important			4
5	Very important			5
6	Don't know			6
28. What v	vould you say is your average monthl	y electric bill? \$_		

In this final section we would like you to give your evaluation of NPPD's Customer Meeting. Please answer the following questions about your experience at the Customer Meeting by circling a number on the response scale following each item.

29.	Overall, the Customer Meeting was	Generally a waste of time	An extremely valuable experience	Don't know			
		1234	4567	8			
30.	Overall would you say the customer meeting was biased towards one side or the other or was it fair?						
		Very Biased	Very Don't Fair know				
		1234	45678				
31.	Did you think the discussion materials were mostly balanced, or that they clearly favored some positions over others?						
	2. Favored some positi	ons over others		. 2			
	If you have any comments please write then	n in the space provided belo	ow.				

Thank you for all of your help!